

We claim:

1. A DNA sequence encoding an antifungal protein having an amino acid sequence which is at least 80% identical to the Rs-AFP2 sequence shown in Figure 1 and containing at least one mutation selected from the group consisting of a basic residue at the position corresponding to position 9 in RsAFP-2, a basic residue at the position corresponding to position 39 in Rs-AFP-2, a hydrophobic residue at the position corresponding to position 5 in Rs-AFP-2 and a hydrophobic residue other than glycine at the position corresponding to position 16 in Rs-AFP-2

2. A vector containing the DNA sequence as claimed in claim 1.

3. A biological system including the DNA sequence as claimed in claim 1 such that the encoded protein is expressed.

4. A biological system as claimed in claim 3 which is a plant.

5. A plant having improved resistance to a fungal pathogen and containing the DNA sequence as claimed in claim 1.

6. A DNA sequence encoding an antifungal protein having an amino acid sequence selected from the group consisting of Rs-AFP2, Rs-AFP1, Rs-AFP3 and Rs-AFP4, wherein said protein contains at least one mutation selected from the group consisting of a basic residue at the position corresponding to position 9 in RsAFP-2, a basic residue at the position corresponding to position 39 in Rs-AFP-2, a hydrophobic residue at the position corresponding to position 5 in Rs-AFP-2 and a hydrophobic residue other than glycine at the position corresponding to position 16 in Rs-AFP-2.

7. A vector containing the DNA sequence as claimed in claim 6.

8. A biological system including the DNA sequence as claimed in claim 6 such that the encoded protein is expressed.

9. A biological system as claimed in claim 8 which is a plant.

10. A plant having improved resistance to a fungal pathogen and containing the DNA sequence as claimed in claim 6.